

DST-NRF PROFESSIONAL DEVELOPMENT PROGRAM (PDP) PHD FELLOWSHIP IN

Genomics, Bioinformatics & Drug Resistance

Mentors:

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The PDP Programme at CAPRISA aims to develop and retain South African scientists and professionals of the highest calibre. The genomics and bioinformatics project is inter-disciplinary and involves collaboration between the CAPRISA – MRC HIV-TB Pathogenesis and Treatment Research Unit and the Flagship Program of the MRC, which are two of the most prestigious research programs in South Africa.

This PhD programme optimally exemplifies how genomics, clinical and bioinformatics information can directly and immediately impact human health in Africa. The project aims to identify factors associated with HIV-1 drug resistance in patients failing antiretroviral therapy (ART). By focusing on the application of Next Generation Sequencing (NGS) to produce whole genomes of the virus, researchers aim to identify new viral mutations associated with drug resistance. This could guide future drug regimens and provide further insight into patients failing ART-based therapy.

The programme aims to:

- Characterise the clinical and genetic causes of acquired drug resistance using a multi-disciplinary analysis approach.
- Determine the frequency of drug resistance-associated mutations in the whole genome, including minority population level.
- Use genome wide association studies (GWAS) to identify novel mutations which are associated with ART failure.
- Formulate strategies to prevent and manage drug resistance.

As part of the PhD the student will receive hands-on laboratory experience in NGS and Bioinformatics.

The PhD fellow will be awarded a fellowship stipend of ZAR 180,000 per annum. Applications are invited from South African or permanent resident students. Please submit a CV and a letter of motivation (max. 500 words) by 20 October 2016 to sma.mzobe@caprisa.org